

1) A number is 12 less than a third of another number. Their sum is 56. What are the two numbers?

Let $x = 1^{\text{st}}$ number

$y = 2^{\text{nd}}$ number

$$x + y = 56$$

$$x = \frac{y}{3} - 12$$

$$y = 51$$

$$x + 51 = 56$$

$$x = 5$$

The two numbers are
51 and 5

$$3 \left(\frac{y}{3} - 12 \right) + y = 56 \cdot 3$$

$$y - 36 + 3y = 168$$

$$4y - 36 = 168$$

$$4y = 204$$

2) Jimmy has a pocketful of quarters and dimes. He has ~~13~~ coins which have a total value of \$2.50. How many of each coin does he have?

Let q = # of quarters

d = # of dimes

$$25(13-d) + 10d = 250$$

$$325 - 25d + 10d = 250$$

$$325 - 15d = 250$$

$$-15d = -75$$

$$d = 5$$

Substitution

$$q + d = 13$$

$$25q + 10d = 250$$

$$q = 13 - d$$

$$q = 13 - 5$$
$$q = 8$$

8 quarters
5 dimes

2) Jimmy has a pocketful of quarters and dimes. He has 13 coins which have a total value of \$2.50. How many of each coin does he have?

Let q = # of quarters

Let d = # of dimes

elimination

$$(-10)q + d = 13 \quad (-10)$$

$$25q + 10d = 250$$

$$-10q - 10d = -130$$

$$25q + 10d = 250$$

$$15q = 120$$

$$q = 8$$

8 quarters
5 dimes

$$\begin{array}{r} 8 + d = 13 \\ -8 \quad -8 \\ \hline d = 5 \end{array}$$

3) There are 3 more dimes than nickels in a sack of coins. The value of the coins is \$8.85. How many nickels are there?

Let N = # of nickels
Let D = # of dimes

$$D = N + 3$$
$$5n + 10d = 885$$

$$5n + 10(n + 3) = 885$$

$$5n + 10n + 30 = 885$$

$$15n + 30 = 885$$

$$15n = 855$$

$$n = 57$$

57 nickels
60 dimes

4) Two angles are supplementary. The measure of one angle is ten more than three times the other. Find the measure of each angle.

Supplementary = 180°

5) Rita is older than Megan. The difference in their ages is twelve and the sum of their ages is fifty. How old is Rita?